

# SAS 58, Audit Firm Size, And The Incidence Of Uncertainties in Audit Reports: An Empirical Study

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## Abstract

*This study develops and investigates two hypotheses: (1) that adoption of SAS 58 should be associated with an increase in the incidence of uncertainties referenced in the audit reports of small audit firms and (2) that there should be no change in the incidence of uncertainties referenced by large audit firms. The empirical results support both hypotheses. The main implication is that standard-setting bodies need to begin giving consideration to the possibility of size-related differences in the effects of changes in auditing standards.*

## Introduction

### Background

The professional auditing literature defines an uncertainty as an item "that is expected to be resolved at a future date, at which time sufficient evidential matter concerning its outcome would be expected to become available" (Auditing Standards Board (ASB) 1988, 15). Prior to the issuance of Statement on Auditing Standards No. 58 (SAS 58) in April 1988, audit firms were required to reference material uncertainties in a qualified opinion. Specifically, the audit opinion had to be qualified "subject to" the uncertainty's ultimate effects, which were not predictable at the time the audit report was issued. Typical uncertainties resulting in the issuance of a "subject to" qualification have included litigation, realization of asset values, and the ability of the client firm to continue as a going concern.

SAS 58 replaced the "subject to" qualified opinion with the requirement for an explanatory paragraph describing the uncertainty. During the transition period from April 1988 through December 1988, audit firms had the option of either qualifying the opinion or making the required reference to the uncertainty in an explanatory paragraph. Beginning in January 1989, use of the explanatory paragraph became mandatory, and audit firms were required to cease issuing "subject to" qualified opinions.

### Motivation

There has been a considerable amount of debate on the question of whether replacing the qualified opinion with the requirement for an explanatory paragraph was a change in form or substance, but very little evidence is available to support either viewpoint. The motivation of this study is to offer empirical evidence that audit firms view a reference to an uncertainty in an explanatory paragraph as substantively different from reference to an uncertainty in a qualified opinion. A unique contribution of the study is that it uses as evidence the actual audit reports issued by audit firms, rather than surveying partner and manager responses to hypothetical cases. The use of audit reports issued by audit firms permits more definitive conclusions as to the actual behavior of auditors.

### Hypotheses

Elimination of the requirement to issue a "subject to" qualification changed the costs that audit firms face when deciding whether or not to reference an uncertainty. Specifically, SAS 58 made it possible to reference uncertainties in the audit report without incurring the costs associated with issuing a qualified opinion. In this study, it is argued that small audit firms experienced a net reduction in the costs of referencing uncertainties after SAS 58 became effective, and that they responded by increasing the proportion of their audit reports referencing uncertainties. The first hypothesis is that

after SAS 58 became effective, there was an increase in the proportion of non-Big Eight audit reports that reference uncertainties. The study also offers an economic rationale as to why large audit firms did not experience a net cost reduction and thus did not change the proportion of their audit reports that reference uncertainties. The second hypothesis is that after SAS 58 became effective, there was no change in the proportion of Big Eight audit reports referencing uncertainties.

### *Methods and Findings*

Counts of clean reports and reports referencing uncertainties were retrieved from NAARS in two time periods: (1) pre-SAS 58, (2) post-SAS 58. The analysis excludes the period in which SAS 58 was voluntary. A dichotomous ANOVA procedure is used to test the hypothesis that the dichotomous dependent variable (report-type) is affected by the SAS 58 time period in which the report was issued. Because of possible violations of statistical assumptions, the dichotomous ANOVA is supplemented with an analysis of contingency tables for each audit firm. The results from the dichotomous ANOVA and contingency table analysis support both hypotheses.

The findings have two implications. The first implication is that reference to uncertainties in an explanatory paragraph is substantively different from reference to uncertainties in a qualified opinion. Although the study is not designed to test the reactions of investors or clients to the reference to uncertainties in the audit report, the results of the study offer evidence that small audit firms view the explanatory paragraph as less costly than the qualified opinion. The second implication is that in future deliberations, standard-setting bodies need to give explicit consideration to the economic costs faced by audit firms. In particular, standard-setting bodies need to recognize that the effects of new auditing standards on the content of audit reports are likely to vary depending upon the size of the audit firm issuing the report.

The study shows that audit firms attach significance to the distinction between the "subject to" qualified opinion and the reference to uncertainties in an explanatory paragraph. Additional research is needed to determine whether or not investors and clients make this distinction as well.

### **Conceptual Development and Hypotheses**

#### *Historical Background of SAS 58*

An uncertainty is defined as an item "that is expected to be resolved at a future date, at which time sufficient evidential matter concerning its outcome would be expected to become available" (ASB 1988, 15). Prior to

the issuance of SAS 58, disclosure of a material uncertainty required that the audit opinion be qualified. In 1978, the Cohen Commission recommended that the qualification requirement be eliminated (Cohen Commission 1978; Elliot 1982). In 1980, the Canadian Institute of Chartered Accountants eliminated the use of the "subject to" opinion in Canada (Elliot 1982). During the early 1980's, the U.S. Auditing Standards Board considered eliminating the "subject to" qualification, but was unsuccessful because of pressure from financial statement users (Mutchler 1985). Finally, in April 1988, the Auditing Standards Board issued Statement on Auditing Standards No. 58, which eliminated the requirement of qualifying the audit opinion if a material uncertainty existed. In SAS 58, mandatory qualification is replaced with the requirement that auditors cease issuing "subject to" qualified opinions and that material uncertainties be referenced in an explanatory paragraph in the audit report.

The probable effects of eliminating the "subject to" qualification were debated while SAS 58 was under consideration, and dissent occurred within the ASB when the final version of the Statement was adopted. An argument against the adoption of SAS 58 was made on the basis that reference to an uncertainty in an explanatory paragraph would be substantively different from reference to the same uncertainty in a qualified opinion. One dissenter on the ASB expressed the viewpoint that the "subject to" qualification "provides a more explicit early warning to financial statement users" and therefore should be retained (ASB 1988, 44).

#### *Economic Costs*

Despite the debate over whether or not elimination of the qualification requirement constituted a substantive change, SAS 58 contains no economic analysis of the probable effects of eliminating the "subject to" qualification. In particular, there is no consideration of the economic costs that audit firms face when deciding whether or not to reference an uncertainty in the audit report. Antle (1982) noted that "unless we believe that auditors are somehow qualitatively different from other types of economic agents that we study, it would seem that we should attempt to apply the same techniques to modeling that we use to model other economic agents" (1982, 503). Although it is too late for economic analysis to influence the specific provisions of SAS 58, an ex post analysis of SAS 58's effects will facilitate better anticipation of the consequences of future changes in auditing standards.

This study analyzes SAS 58 from an economic perspective that focuses on audit firms' costs of referencing an uncertainty relative to the costs of not referencing it. According to DeAngelo (1981) and Watts and Zimmerman (1986), the probability that the existence of a

material uncertainty will be referenced in the audit report depends in part upon the audit firm's ability to withstand pressure from management not to reference the uncertainty. Prior to SAS 58, audit firms faced a complex economic assessment in deciding whether or not to reference a material uncertainty. The cost of referencing the uncertainty was that it required the issuance of a qualified opinion, which is costly to the client and the audit firm. Costs resulting from the issuance of a qualified opinion are evident in negative returns to client stockholders (Firth 1978; Ball et al. 1979; Elliot 1982; Chow and Rice 1982b; Dodd et al. 1984; Dopuch et al. 1986; Loudder et al. 1992) and the loss of clients by the audit firm issuing the opinion (Chow and Rice 1982a; Gul et al. 1992). By eliminating the "subject to" qualification, SAS 58 permits audit firms to reference uncertainties in the audit report without incurring the costs attendant to a qualified opinion. The cost of not referencing the uncertainty was that the audit firm ran the risk of being sued if the ultimate realization of the uncertainty resulted in harm to shareholders or other financial statement users. SAS 58 had no effect on the cost of not referencing the uncertainty.

Thus, at first glance, SAS 58's elimination of the "subject to" qualification might be expected to reduce the net costs of referencing uncertainties for all audit firms by enabling them to avoid the costs associated with the issuance of a qualified opinion. However, this line of reasoning ignores the fact that the costs of referencing uncertainties (relative to the costs of not referencing them) depend upon audit firm size, both before the issuance of SAS 58 and after. DeAngelo (1981) and Watts and Zimmerman (1986) offer an economic justification for expecting the costs of issuing a qualified opinion to be lower for large audit firms than for small firms. Large firms typically have more clients than small firms and thus are better able to absorb the loss in revenues associated with client defection in order to protect the reputation of the firm (DeAngelo 1981; Watts and Zimmerman 1986). Also, after the issuance of SAS 58, highly visible (large) audit firms had incentives to avoid the political costs that they would incur if they were to increase the extent to which uncertainties were referenced in response to a relaxation of reporting standards.<sup>1</sup> The political costs would result from the perception that an increase in the proportion of reports referencing uncertainties pursuant to the adoption of a reporting standard that reduces the costs of referencing uncertainties is evidence of failure to reference uncertainties in the past because of an unwillingness to bear the economic costs.

### *Hypotheses*

By eliminating the requirement to qualify the audit opinion, SAS 58 affected the economic costs that audit firms face when deciding whether or not to reference a

material uncertainty in the audit report. The effects of SAS 58 on the costs of referencing an uncertainty (relative to the costs of not referencing it) depend upon the size of the audit firm. For small audit firms, the costs of not referencing the uncertainty remain as before, but the costs of referencing the uncertainty are reduced by elimination of the need for a qualified opinion. SAS 58's reduction in small audit firms' net costs should be reflected in an increase in the incidence of non-Big Eight audit reports referencing uncertainties. Thus, the first hypothesis is:

**H1:** After SAS 58 became effective, there was an increase in the proportion of non-Big Eight audit reports referencing uncertainties.

As discussed earlier, there are two reasons why the net decrease in costs experienced by large audit firms is smaller than that of small firms. First, the reduction in the costs of referencing an uncertainty in the audit report is smaller for large firms because prior to SAS 58 large firms faced lower costs when issuing a qualified opinion. Second, an increase in the proportion of reports referencing uncertainties would impose political costs on large firms, but not on small firms. Thus, large firms experienced little or no net decrease in costs associated with referencing uncertainties in audit reports. This leads to the second hypothesis:

**H2:** After SAS 58 became effective, there was no change in the proportion of Big Eight audit reports referencing uncertainties.

The next section describes the empirical procedures used to test these hypotheses.

### **Empirical Procedures**

#### *Comparison to Previous Studies*

The purpose of the empirical procedures documented below is to determine whether or not there was a statistically significant change in the incidence of Big Eight and non-Big Eight audit reports referencing uncertainties between the pre-SAS 58 and post-SAS 58 periods. There are several ways in which this objective is markedly different from the objectives of prior research (Warren 1975, 1980; Mutchler 1985; Dopuch et al. 1986; Dopuch et al. 1987; Bell and Tabor 1991; Loudder et al. 1992; Chen and Church 1992). First, this study is intended to investigate the response of audit firms to SAS 58, not to test the reactions of clients or investors. Second, the objective of this study is to test hypotheses about the ex post incidence of the reference to uncertainties, not to develop a model to make ex ante assertions about the probability of an uncertainty being referenced. Third, the unit of analysis in this study is the proportion of audit reports referencing uncertainties, not

**Table 1**  
**Count of Sample Audit Reports by Type**  
**And Reconciliation To The Total Number Of Reports On NAARS**

<b>Pre-SAS 58 (From the 1987 NAARS file)</b>		
<b>Included in Sample</b>		
Uncertainty	265	
Clean	<u>1,637</u>	
Number of 1987 Reports Included in the Pre-SAS 58 Sample		1,902
<b>Excluded from Sample</b>		
Date later than 1/31/1988	788	
Contained Informative Disclosure	703	
Contained Consistency Exception	650	
Other (disclaimer, adverse, reliance on other auditors, etc.)	<u>158</u>	
Number of 1987 Reports Excluded from the Pre-SAS 58 Sample		<u>2,299</u>
<b>Number of Reports on 1987 NAARS File</b>		<u>4,201</u>
<b>Post-SAS 58 (From the 1988 NAARS file)</b>		
<b>Included in Sample</b>		
Uncertainty	300	
Clean	<u>1,563</u>	
Number of 1988 Reports Included in the Post-SAS 58 Sample		1,863
<b>Excluded from Sample</b>		
Date before than 11/1/1988	816	
Contained Informative Disclosure	478	
Contained Consistency Exception	925	
Issued by post-merger Ernst & Young	48	
Other (disclaimer, adverse, reliance on other auditors, etc.)	<u>70</u>	
Number of 1988 Reports Excluded from the Post-SAS 58 Sample		<u>2,337</u>
<b>Number of Reports on 1988 NAARS File</b>		<u>4,200</u>

the individual client firms for which the reports were issued. Fourth, the focus of this study is on all uncertainties, not on specific types of uncertainties such as litigation, asset realization, etc.<sup>2</sup> Finally, this is the first study to assess the effects of a change in standards for referencing uncertainties. Because the objectives of this study are different from those of previous research, different empirical procedures are employed.

#### *Sample Data*

For each time period under investigation, NAARS

was queried to obtain a count of clean audit reports and reports referencing uncertainties for each of the (then) Big Eight audit firms and for all other audit firms as a group.<sup>3</sup> A clean report is defined as one which does not include any modifications to the standard language, such as references to uncertainties, informative disclosures, explanatory paragraphs, disclaimers, or qualifications. Clean reports are identified on NAARS by the keyword UNQUAL. Reports referencing uncertainties are identified on NAARS with the keyword CONTG. Counts were obtained for two time periods: (1) pre-SAS 58, and (2) post-SAS 58. The transition period in which

SAS 58 was voluntary is excluded from the analysis. Data were retrieved from the NAARS annual files for 1987 and 1988. The 1987 annual file includes audit reports with financial statement dates from 7/1/87 through 6/30/88. The 1988 annual file includes audit reports with financial statement dates from 7/1/88 through 6/30/89.

Based on a two-month reporting lag together with the 1/1/89 mandatory effective date for SAS 58, the cutoff dates are as follows<sup>4</sup>:

<u>SAS 58 Period</u>	<u>Financial Statement Dates</u>
Pre-SAS 58	From 7/1/87 through 1/31/88
Post-SAS 58	From 11/1/88 through 6/30/89

This approach results in a sample of 3,765 audit reports, with 1,902 reports for the pre-SAS 58 period and 1,863 reports for the post-SAS 58 period. Table 1 summarizes the counts of audit reports and reconciles to the total number of reports on each annual NAARS file.

#### *Statistical Tests*

The hypotheses are first tested using dichotomous ANOVA. The dichotomous dependent variable is report-type, coded as "0" for clean or as "1" for uncertainty. The two levels of the main effect are pre-SAS 58 and post-SAS 58. The dichotomous ANOVA is conducted for each of the Big Eight audit firms and for all other audit firms as a group.

Chow and Rice (1982a) criticized dichotomous ANOVA (and multiple discriminant analysis) for violating the assumption that the independent variables have a normal distribution. They proposed the use of logit or probit as more appropriate alternatives. The decision to use dichotomous ANOVA in this study is based on the precedent established by previous studies, together with the availability of non-parametric techniques to ensure that violations of assumptions in the ANOVA do not result in inappropriate conclusions. The construction of two-by-two contingency tables for each audit firm comparing the distribution of audit reports by type in the pre- and post-SAS 58 periods not only permits tests that are free of assumptions regarding the distribution of the data, but also can offer additional insight about the effects of SAS 58 on individual audit firms.

Finally, obtaining consistent results from nonparametric and parametric techniques increases confidence in the validity of the findings. With parametric methods, there is a risk that violations of the distributional assumptions will result in untenable findings. With nonparametric methods, there is a risk that the low power of the tests will result in failure to reject the null hypothesis when it should be rejected. In this study, the

use of dichotomous ANOVA in conjunction with a chi-square-based analysis of contingency tables reduces both types of risk and eliminates the need to conduct distributional tests on the variables.

## **Results and Discussion**

### *Results*

Table 2 reports summary results of the dichotomous ANOVAs for each of the Big Eight audit firms and for all non-Big Eight audit firms as a group. As reported in Table 2, none of the Big Eight audit firms experienced a statistically significant change in the proportion of audit reports referencing uncertainties. The non-Big Eight firms experienced a statistically significant increase. Thus, the results of the dichotomous ANOVAs support both hypotheses. Additional support for the size-related rationale underlying the two hypotheses is evident from the fact that the only Big Eight firm experiencing a marginally significant increase in the proportion of reports referencing uncertainties was Touche Ross, the smallest of the Big Eight in the time period under investigation (with size measured by total revenues).

Table 3 reports summary statistics from an analysis of contingency tables for each Big Eight audit firm and for all non-Big Eight audit firms as a group. As reported in Table 3, none of the Big Eight audit firms experienced a statistically significant change in the proportion of audit reports referencing uncertainties. The non-Big Eight firms experienced a statistically significant increase. These results lend further support to the hypotheses by corroborating the results of the dichotomous ANOVAs. In Table 3, as in Table 2, only the smallest Big Eight firm (Touche Ross) experienced a marginally significant increase in the proportion of audit reports referencing uncertainties.

### *Discussion*

The results of the dichotomous ANOVA indicate that the adoption of SAS 58 was associated with an increase in the proportion of non-Big Eight audit reports referencing uncertainties, and that there was no change in the proportion for Big Eight firms. The results of the contingency table analysis confirm the conclusions drawn from the ANOVAs. Thus, the empirical results support both hypotheses of the study.

The findings lend credence to the argument that SAS 58's elimination of the "subject to" qualification reduced the cost of referencing uncertainties for small audit firms, but had little or no net effect on large firms. The underlying rationale is that small and large firms both experienced reductions in the cost of referencing uncertainties, but the reduction was greater for small firms.

**Table 2**  
**Dichotomous ANOVA Summary Statistics**  
**Report Type Versus SAS 58 Time Period**  
**Pre-SAS 58 Versus Post-SAS 58**  
**For Each Audit Firm**

<u>Audit Firm</u>	<u>Number of Reports</u>	<u>F-Statistic</u>	<u>P-Value</u>
Arthur Andersen	604	.005	.943
Arthur Young	286	.035	.851
Price Waterhouse	429	.238	.626
Coopers and Lybrand	424	.874	.350
Ernst and Whinney	428	.460	.498
Deloitte, Haskins, and Sells	313	.002	.962
Peat Marwick Main	626	1.316	.252
Touche Ross	267	3.578	.060
Non-Big Eight	388	6.847	.009
Total Reports	3,765		

## Notes:

1. There are two report types: (1) clean, and (2) uncertainty.
2. There are two SAS 58 time periods: (1) pre-SAS 58, (2) post-SAS 58.
3. There are nine audit "firms" with separate codes for each of the Big Eight and one code for non-Big Eight.

Also, the reduction in costs experienced by large firms was to some extent offset by the potential for an increase in political costs that would result from increasing references to uncertainties in response to a relaxation of reporting standards.

There is a possibility that the differential response to SAS 58 by large and small audit firms is attributable to factors other than changes in the costs of referencing uncertainties. Three conditions must be met in order for an audit report to reference a material uncertainty: (1) The uncertainty must exist, (2) it must be discovered, and (3) it must be referenced (Watts and Zimmerman 1986). This study has focussed on the third condition, assuming that there was no change between the pre- and post-SAS 58 periods in either of the first two conditions. That is, the explanation given for the findings attributes the difference in responses to SAS 58 between small and large audit firms to changes in the probability that an uncertainty is referenced in the audit report, given that there was no change in the probabilities that uncertainties existed and were discovered. Alternative explanations for the findings are that: (1) clients of small audit firms experienced an increase in the incidence of material uncertainties between the pre- and post-SAS 58 time periods, and/or (2) small audit firms began discovering a greater proportion of existing material uncertain-

ties between the pre- and post-SAS 58 time periods. Although neither alternative explanation can be completely ruled out based on the evidence presented in this study, there is a sound economic rationale underlying the cost-based explanation, and no rationale for either of the alternatives. Also, the study's use of a narrow time window surrounding the issuance of SAS 58 reduces the probability that the results are attributable to anything other than the hypothesized effect of SAS 58 on the cost structure faced by audit firms.<sup>5</sup>

#### *Implications*

Two implications can be drawn from the findings. The first implication is that SAS 58's elimination of the "subject to" qualified opinion was a change in substance, not merely a change in form. Specifically, the evidence indicates that small audit firms view reference to an uncertainty in an explanatory paragraph as less costly than reference in a "subject to" qualified opinion. The reduction in costs associated with the adoption of SAS 58 resulted in an increase in the incidence of uncertainties referenced by small audit firms. The second implication is that standard-setting bodies need to begin giving explicit consideration to the economic costs faced by audit firms. The status of auditing as a profession does not make it immune to economic forces. Consideration

**Table 3**  
**Contingency Table Summary Statistics**  
**Report Type Versus SAS 58 Time Period**  
**By Audit Firm**

<u>Audit Firm</u>	<u>Number of Reports</u>	<u>Chi-Square Statistic</u>	<u>P-Value</u>
Arthur Andersen	604	.005	.943
Arthur Young	286	.035	.851
Price Waterhouse	429	.239	.625
Coopers and Lybrand	424	.877	.349
Ernst and Whinney	428	.460	.497
Deloitte, Haskins, and Sells	313	.002	.963
Peat Marwick Main	626	1.313	.252
Touche Ross	267	3.629	.057
Non-Big Eight	<u>388</u>	6.856	.009
Total Reports	<u>3,765</u>		

Notes:

1. There are two report types: (1) clean, and (2) uncertainty.
2. There are two SAS 58 time periods: (1) pre-SAS 58, (2) post-SAS 58.
3. There are nine audit "firms" with separate codes for each of the Big Eight and one code for non-Big Eight.

of economic forces needs to be directly incorporated into the standard-setting process in order to better anticipate the consequences of alternative courses of action. Standard-setting bodies need to recognize that the effects of new auditing standards are not likely to be uniform across all audit firms. In particular, large audit firms are likely to exhibit different responses from small audit firms.

### Summary and Conclusions


In April 1988, the Auditing Standards Board issued Statement on Auditing Standards No. 58, which eliminated the "subject to" qualified opinion and replaced it with a requirement that uncertainties be referenced in an explanatory paragraph in the audit report. This study has shown that elimination of the "subject to" qualified opinion was associated with an increase in the incidence of non-Big Eight audit reports referencing uncertainties. It was argued that the increase was attributable to the reduction in costs that small audit firms experienced as result of the elimination of the "subject to" qualified opinion in SAS 58. The main conclusion is that replacement of the "subject to" qualified opinion was a change in substance, not merely a change in form. The main implication is that standard-setting bodies need to begin giving consideration to the possibility of size-related differences in the effects of changes in auditing

standards.

### Suggestions for Future Research

The results of the study suggest several issues for future research. In this study, the conceptual development underlying the hypotheses is ex ante, in the sense that it is based on audit firms' adjusting (or maintaining) their report-type mix in response to expected actions by investors and client firms. The increase in the incidence of non-Big Eight audit reports referencing uncertainties was a response to the expectation that investors and client firms would view the explanatory paragraph as less damaging than the "subject to" qualified opinion. Because of audit firms' tendency to behave "as if audit opinions matter" (Loudder et al. 1992, 69), additional research is needed to determine whether or not the audit firms' expectations were realized ex post. That is, research is needed to determine if investors and client firms attach significance to the distinction between the "subject to" qualified opinion and the explanatory paragraph.

Two empirical questions are crucial in this regard. First, is the reference to an uncertainty in an explanatory paragraph associated with negative returns to client shareholders as was the case before SAS 58 when the opinion had to be qualified? This question could be

answered by replicating Chow and Rice (1982b), Elliot (1982), Dodd et al. (1984), Dopuch et al. (1986), or Loudder et al. (1992) using data from the post-SAS 58 period. Second, is the reference to an uncertainty in an explanatory paragraph associated with client loss as was the case before SAS 58 when the opinion had to be qualified? This question could be answered by replicating Chow and Rice (1982a) using data from the post-SAS 58 period. Audit firms' expectations concerning probable actions by investors and client firms will have been confirmed to the extent that both empirical questions are answered in the negative. 

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#### \*\*\*Notes\*\*\*

1. This argument is based upon an application of the size hypothesis (Watts and Zimmerman 1986) to audit firms. Strictly speaking, the size hypothesis is that large, highly visible corporations tend to choose accounting methods that defer and/or smooth earnings in order to avoid political costs resulting from public visibility. Because audit firms do not disclose earnings, public visibility is focussed on their product, i.e. the audit report. For this reason, large audit firms can be expected to avoid political costs, in part, through astute management of the mix of audit reports issued by the firm. This line of reasoning is similar in spirit to that of Warren (1975,1980) who employed the audit report as a surrogate for unobservables underlying the audit process.
2. Several studies have investigated each type of uncertainty separately (going concern, litigation, etc.) The rationale underlying the hypotheses in this study does not imply any change in the mix of uncertainty types comprising the total pool of uncertainties disclosed in audit reports. Although the mix of uncertainties is an interesting question in its own right, it has no bearing on the hypotheses in this study.
3. Based upon the rationale underlying the hypotheses of the study, the most preferred measure of audit firm size would be the number of clients. Because such information is not normally available, we follow the well-established approach of segregating Big Eight and non-Big Eight audit firms, under the argument that each of the Big Eight firms has a much larger client base than any of the non-Big Eight firms. Some studies have used a dichotomous variable defining the audit firm as Big Eight or other (Palmrose 1986; Simon and Francis 1988). This study follows Warren (1975, 1980) and uses a finer partition in which each Big Eight firm is identified. As evident in the results and discussion sections, this approach yields insights that would not have been possible if all Big Eight firms had been pooled as a single group.
4. A complication arises because SAS 58 became voluntary (and then mandatory) based on the audit report date rather than the financial statement date. Specifically, SAS 58 was voluntary for reports issued from April 1988 through December 1988, and became mandatory for reports beginning in January 1989. The complication is that NAARS permits queries based on the financial statement date, not the audit report date. Thus, it was necessary to make assumptions concerning the lag between the financial statement date and issuance of the auditor's report. To assess the sensitivity of the findings, we made three different report-lag assumptions: (1) two months for clean and uncertainty reports, (2) three months for clean and uncertainty reports, and (3) two months for clean reports and three months for uncertainty reports. The ultimate findings of the study were not affected by the report-lag assumption, and accordingly, only those findings assuming a report lag of two months for clean and uncertainty reports are reported in this paper.
5. Warren (1975) noted the need for time-series analysis of the degree of uniformity with which auditing standards are applied. Warren (1980) conducted such an analysis by choosing two years (1973 and 1974) in which U.S. economic conditions changed dramatically. As a result, he was able to observe non-uniform responses to changing economic conditions. In the time period employed in this study (July, 1987 through June, 1989), economic conditions were stable, but a major change occurred in the reporting environment, i.e. SAS 58 was issued in April 1988. These circumstances increase confidence in the assertion that systematic patterns in differences between the pre- and post-SAS 58 periods that are consistent with the rationale underlying the hypotheses are in fact attributable to the issuance of SAS 58.

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